

Claims

I claim:

1. A can trimmer apparatus comprising:
 - 5 a sealed outer housing;
 - a removable power connection on the exterior of and extending through the housing, wherein said power connection is operatively and removably connected to a first shaft;
 - a first rotating blade mounted on the first shaft;
 - 10 a second rotating blade mounted on a second shaft, wherein the second rotating blade is spaced apart from the first rotating blade by an adjustable gap and wherein the first and second shafts have substantially the same mass;
 - an inner housing connected to the second shaft;
 - a first keyed spur bearing rotated by the first shaft;
 - 15 a second, third, and fourth spur bearings rotated by the first spur bearing, wherein the fourth spur bearing is keyed to rotate the second shaft;
 - an adjustment mechanism accessible from the exterior of the outer housing to adjust a third shaft that is connected to the inner housing by zero end play bearings, wherein adjustment of the third shaft changes the gap
 - 20 between the first and second rotating blades;
 - a fourth shaft receiving external power for movement in a direction along the length of the fourth shaft; and
 - a motion translator mechanism that translates movement and power from the fourth shaft to a direction perpendicular to the length of the fourth shaft,
 - 25 wherein the motion translator is connected to the inner housing to cause the second

rotating blade to move in the perpendicular direction to pivot between an open position and a closed position.

2. The can trimmer apparatus of Claim 1 wherein the removable power
5 connection comprises a tang.

3. The can trimmer apparatus of Claim 2 wherein the tang has a square cross-section.

10 4. The can trimmer apparatus of Claim 2 wherein the tang has an octagonal cross-section.

5. The can trimmer apparatus of Claim 2 wherein the tang is secured to the first shaft by means of a setscrew.

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6. The can trimmer apparatus of Claim 1 further comprising:
a blade guard, and a piece of rubber mounted on the first shaft; and
wherein the second rotating blade moves the against the blade guard to
compress against the piece of rubber so the second rotating blade overlaps the first
20 rotating blade when in a closed position.

7. The can trimmer apparatus of Claim 1 wherein the second rotating blade is maintained substantially parallel to the first rotating blade to maintain the gap between the blades during the perpendicular movement of the second rotating
25 blade.

8. A can trimmer apparatus comprising two blades and an adjustment mechanism to adjust a gap between the blades, wherein the adjustment mechanism is accessible from the exterior of the trimmer apparatus.

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9. The can trimmer apparatus of Claim 8 further comprising:

a first shaft on which one of the blades is mounted;

a housing connected to the first shaft;

a second shaft connected to the second blade at least partially contained

10 in the housing; and

wherein the adjustment mechanism comprises an adjustment screw accessible from the exterior of the trimmer apparatus, wherein rotation of the adjustment screw moves the second shaft in a direction along its length to adjust the gap between the blades.

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10. The can trimmer apparatus of Claim 9 further comprising a locking mechanism to substantially maintain the position of the second shaft once the gap is adjusted.

20 11. The can trimmer apparatus of Claim 8 wherein the gap is about 8-25% of the thickness of the metal of a can.

12. The can trimmer apparatus of Claim 8 wherein the gap is about 8-15% of the thickness of the metal of a can.

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13. The can trimmer apparatus of Claim 8 wherein the gap is about 8-10% of the thickness of the metal of a can.

14. The can trimmer apparatus of Claim 8 further comprising a sealed gear housing.

5 15. The can trimmer apparatus of Claim 14 wherein the housing is sealed by o-rings.

16. The can trimmer apparatus of Claim 8 further comprising spur gears.

17. A can trimmer apparatus comprising:
a first blade mounted on a first shaft; and
a second blade mounted on a second shaft, wherein the first and second
5 shafts are about the same mass.

18. The can trimmer apparatus of claim 17 further comprising:
an adjustment mechanism to adjust a gap between the first and second
blades, wherein adjustment of the gap is in a direction perpendicular to the
10 direction of movement between the open and closed positions; and
a motion translator to translate the direction of motion of the second
blade between the open and closed positions with substantially no motion in the
direction of the gap.

15 19. The can trimmer of claim 18 further comprising a sealed gear housing.

20. The can trimmer apparatus of Claim 18 wherein the gap is about 8-25%
of the thickness of the metal of a can.

20 21. The can trimmer apparatus of Claim 18 wherein the gap is about 8-15%
of the thickness of the metal of a can:

22. The can trimmer apparatus of Claim 18 wherein the gap is about 8-10%
of the thickness of the metal of a can.

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23. The can trimmer of claim 18 wherein the adjustment mechanism is
accessible from the exterior of the apparatus.

24. The can trimmer of Claim 23 wherein the adjustment mechanism comprises:

- an adjustment screw;
- 5 an adjustment nut; and
- a locking mechanism.

25. A can trimmer apparatus comprising a housing and a power connection
10 accessible from the exterior of the housing, wherein said power connection is replaceable without opening the housing.

26. The can trimmer of claim 25 wherein the power connection is a tang.